No.

9600195

AHUR ONITHED SHAMES OF AMIERIOA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nobartis Seeds, Inc.

Mocress, there has been presented to the

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN SUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY ECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S23-06'

In Vestimonn Messent, I have hereunto set my hand and caused the seal of the Mant Antietn Aratection Office to be affixed at the City of Washington, D.C. this thirty-first day of January, in the year of our Lord two thousand.

Secretary of Agriculture

Allosti

Ann marie

Commissioner Plant Variety Protection Office Agricultural Marketing Service

REPRODUCE LOCALLY. Include form number a U.S. DEPARTMENT OF AGRICULTURAL MARKETIN	RICULTURE IG SERVICE		FORM APPROVED - OMB NO. 0581-000 made in accordance with the Privacy Act			
APPLICATION FOR PLANT VARIETY P	ROTECTION CERTIFIC	ATE certificate is to be issued (7 U	Application is required in order to determine if a plant variety protect certificate is to be issued (7 U.S.C. 2421). Information is held confider until certificate is issued (7 U.S.C. 2426).			
(Instructions and information collection b 1. NAME OF APPLICANT(S) las it is to appear on the Certificate		2. TEMPORARY DESIGNATION OR				
	•	EXPERIMENTAL NUMBER	3. VARIETY NAME			
Northrup King Co.			S 23-06			
4. ADDRESS (Street and No., or R.F.D. No., City, State, and Z	IP Code, and Country)	5. TELEPHONE (include area code)				
	, 552, 2.15 554,12,1		FOR OFFICIAL USE ONLY			
P. O. Box 949 Washington, Iowa 52353-0949		319-653-6645	9600195			
		6. FAX (include area code)	FIDATE			
Attention: Dr. John C. Thorne		230 (52 4600	i L			
	·	319-653-4609	n 7 1 0 19 79 7997			
7. GENUS AND SPECIES NAME	B. FAMILY N	IAME (Botanical)	FILING AND EXAMINATION FIE:			
Clucino mau		•	5 * 2 4 5 7 5 <u>9</u>			
9. CROP KIND NAME (Common name)	Legumi	Inosae	E DATE			
			* 751 m . 14 1992			
Soybean 10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FOR			CERTIFICATION FEE:			
Northrup King Co.	M OF ORGANIZATION (corporate	on, partnership, association, etc.) [Common name]	t. 23/7)			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	F DATE			
Delaware		1976				
Dr. John C. Thorne Northrup King Co. P. O. Box 949 Washington, Iowa 52353-0949			15. FAX (include area code)			
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBM	MITTED (Follow instructions on re	versel				
a. X Exhibit A. Origin and Brooding History of the Variety						
b. X Exhibit B. Statement of Distinctness						
c. [X] Exhibit C. Objective Description of the Variety d. Exhibit D. Additional Description of the Variety						
e. 🗵 Exhibit E. Statement of the Basis of the Applicant's (Ownership					
f. X Voucher Sample (2,500 viable untreated seeds or, for		cation that tissue culture will be deposited and main	tained in a public repository)			
g. X Filing and Examination Fee (\$2,460), made payable to						
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIE YES 'If "yes," answer items 18 and 19 below)		ONLY, AS A CLASS OF CERTIFIED SEED? (See Self "no," go to item 20)	etion 83(e) of the Plant Variety Protection Acti?			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIE GENERATIONS?	TY BE LIMITED AS TO NUMBER	OF 19. IF "YES" TO ITEM 18, WHICH CLASS	ES OF PRODUCTION BEYOND BREEDER SEED?			
☐ YES ☑ NO	And the second	☐ FOUNDATION ☐ REGIST	ERED CERTIFIED			
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VA	ARIETY BEEN RELEASED, USED, C	OFFERED FOR SALE, OR MARKETED IN THE U.S. O	R OTHER COUNTRIES?			
21. The applicant(s) declare that a viable sample of basic seed of trapplicable, or for a tuber propagated variety a tissue culture with the undersigned applicant(s) is(are) the owner(s) of this sexual Section 41, and is entitled to protection under the provisions of	vill be deposited in a public reposit Ily reproduced or tuber propagated f Section 42 of the Plant Variety P	tory and mainteined for the duration of the certificat d plant variety, and believe(s) that the variety is new Protection Act.	c.			
Applicant(s) is lare) informed that felse representation herein ca	in jeopardize protection and result	in penalties. SIGNATURE OF APPLICANT (Owner(s))				
the Thane		OSSAN OIL OF AFFLICANT [UMner[S]]				
NAMY (Please print or type)		NAME (Please print or type)				
Dr. John C. Thorne		<u> </u>				
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE			

EXHIBIT A

Origin and Breeding History of the Variety

The soybean variety 'S 23-06' is derived from a single F6 plant from the cross 'S 21-98' x 'S 19-90'. The cross was made in the summer of 1987 at the Northrup King Research Center at Washington, Iowa. The F1 and F2 generations were grown at the Northrup King Research Center at Waimea, Kauai, Hawaii, in the winter of 1987-88; the F3 at Washington in the summer of 1988; the F4 and F5 at Waimea in the winter of 1988-89, and the F6 at Washington in the summer of 1989. The F1 was bulk harvested. The F2 through F5 were advanced by harvesting 2-4 seeds per plant and planting 600 seed from the resulting bulk. In the fall of 1989, 75 plants were harvested and threshed individually. The progeny from each of these plants were planted in a two replicate yield trial at Washington in 1990. One of these, numbered M322606, was selected based on yield and agronomic characteristics for further testing. This line was subsequently tested under the temporary designation X9523 and named S 23-06. It has been tested at several northern and central combelt locations in the U.S. and in southern Ontario from 1991 through 1994 and found to yield well compared to other mid Group 2 varieties. Descriptive characteristics including purple flowers, tawny pubescence, and tan pods, have been identified and confirmed. The original line was found to be segregating for hilum color (yellow and gray). S 23-06 has been tested in the field for iron deficiency chlorosis and found to be susceptible. Field tests have also shown it to have moderate resistance to brown stem rot. It has been tested for reaction to Races 1, 3, 4, 7, and 17 of Phytophthora sojae using hypocotyl inoculation of greenhouse grown plants and found to carry the Rps1-c gene for resistance.

In the winter of 1992-93, 500 seeds of M322606 were planted at Waimea and approximately 100 plants were harvested and threshed individually. Progeny with yellow hilum color were kept separate from those with gray hilum color. The progeny of these plants were grown at Washington in the summer of 1992 to monitor variability and to produce Pedigree Seed. A few plants which had white flowers or gray pubescence were removed. These were assumed to have resulted from mechanical mixture or outcrossing. All yellow hilum rows were uniform and were bulked to produce Pedigree Seed. This seed was planted in the Washington area in 1994 to produce Breeder Seed. The increase block was rogued carefully during flowering and at maturity.

Foundation Seed of S 23-06 was produced in 1995 from the 1994 Breeder Seed. The Iowa Crop Improvement Association inspected the fields and found them to meet the standards for Foundation Seed. The National Soybean Variety Review Board approved S 23-06 for Certification in December, 1995.

S 23-06 is stable and uniform. Over four years of testing and three cycles of seed increase, we have observed no variants other than the hilum color variation mentioned above. The purified variety has yellow hilum color, but may contain up to 2% other hilum color. Also, as with other varieties with tawny pubescence of this hilum color genotype, under some environments the hilum color may appear to be a very light buff color. Any off-type plants removed from increase fields were assumed to have arisen from admixture or outcrossing. Varietal purity will be maintained using progeny rows as described previously.

EXHIBIT B

Novelty Statement for the Variety

S 23-06 is most similar to S 20-91. It can be differentiated from S 20-91 on the basis of hilum color. Seeds of S 23-06 have yellow hila; seeds of S 20-91 have gray hila.

3

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE LIVESTOCK, MEAT, GRAIN & SEED DIVISION PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MARYLAND 20705

EXHIBIT C (Soybean).

Page 1 of 4

OBJECTIVE DESCRIPTION OF VARIETY

SO	YBEAN (Glycine max L.)	
NAME OF APPLICANT(S)	TEMPORARY DESIGNATE	ON VARIETY NAME
Northrup King Co.	X9523(M322606)	S 23-06
ADDRESS (Street and No., or R.F.D. No., City, State, and Z.	FOR OFFICIAL USE ONLY	
P. O. Box 949	PVPO NUMBER	
Washington, Iowa 52353-0949	9600195	
Choose the appropriate response which characterizes t in your answer is fewer than the number of boxes prov	he variety in the features describ vided, place a zero in the first bo	bed below. When the number of significant digits ox when number is 9 or less (e.g., 0 9).
1. SEED SHAPE: 2		ened (L/W ratio > 1.2; L/T ratio = < 1.2) ned (L/T ratio > 1.2; T/W > 1.2)
2. SEED COAT COLOR: (Mature Seed)		
1 = Yellow 2 = Green 3 = Brown	4 = Black 5 = 0	ther (Specify)
3. SEED COAT LUSTER: (Mature Hand Shelled Seed)		
1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny	('Nebsoy'; 'Gasoy 17')	
4. SEED SIZE: (Mature Seed)		
2 0 Grams per 100 seeds		
5. HILUM COLOR: (Mature Seed)		
2 1 = Buff 2 = Yellow 3 = Brown	4 = Gray 5 = Imperfec	et Black 6 = Black 7 = Other (Specify)
May have a slight tan color in some e 6. COTYLEDON COLOR: (Mature Seed)	erv i r onmerics	
1 = Yellow 2 = Green		
7. SEED PROTEIN PEROXIDASE ACTIVITY:		
1 = Low 2 = High		
8. SEED PROTEIN ELECTROPHORETIC BAND:		
1 = Type A (SP1 ^a) 2 = Type B (S	9P1 ^b)	
9. HYPOCOTYL COLOR:		
1 = Green only ('Evans'; 'Davis') 2 = Gro 3 = Light Purple below cotyledons ('Beeson'; 'Picke 4 = Dark Purple extending to unifoliate leaves ('Hoo		ons ('Woodworth'; 'Tracy')
10. LEAFLET SHAPE:		
3 1 = Lanceolate 2 = Oval 3 =	Ovate 4 = Other (Specify))
		SAAA

FORM LMGS-470-57 (2-82)

11. LEAFLET SIZE:					
2 1 = Small ('Amsoy 71' 3 = Large ('Crawford';		2 = Medium ('Corso		RECEIVED DA-AMS-PVPO	
12. LEAF COLOR:					
1 = Light Green ('Webo 3 = Dark Green ('Gnor		2 ≈ Medium Green (Corsoy 79'; 'Braxtor	" MAR 19 A10:07	
13. FLOWER COLOR:					
2 1 = White	2 = Purple 3	= White with purple th	roat .		
14. POD COLOR:					
1 1 = Ten 2 :	= Brown 3 = B	łack.			
15. PLANT PUBESCENCE COLOR	:				
2 1 = Gray 2 =	F Brown (Tawny)				
16. PLANT TYPES:		- 			V
2 1 = Siender ('Essex'; 'A 3 = Bushy ('Gnome'; 'G		2 = Intermediate l'Ar	ncor'; "Braxton")		
17. PLANT HABIT:					· · · · · · · · · · · · · · · · · · ·
3 1 = Determinate ('Gnon 3 = Indeterminate ('Neb	ne'; 'Braxton') osoy'; 'Improved Pelican')	2 = Semi-Determinate	('Will')		
18. MATURITY GROUP:					· · · · · · · · · · · · · · · · · · ·
5 1 = 000 2 = 00 9 = VI 10 = V	_ +	4= J 5= II 12 = IX 13 = X	6 = III	7 = IV 8 = V	
19. DISEASE REACTION: (Enter 0	= Not Tested; 1 = Suscepti	ble; 2 = Resistant)			
BACTERIAL DISEASES:					
Bacterial Pustule (Xanth	nomonas phaseoli var. sojens	sis)			
0 Bacterial Blight (Pseudo)	monas glycinea)				
Wildfire (Pseudomonas to	abaci)				
لنسا FUNGAL DISEASES:					
1 Brown Spot (Septoria gl)	ycines)			960019	Σ
Frogeye Leaf Spot (Cerc	ospora sojina)				
0 Race 1 0 Race		0 Race 4	0 Race 5	Other (Specify)	·
0 Target Spot (Corynespor	a cassiicola)				
0 Downy Mildew (Peronoss	oora trifoliorum var. manshi	urica)			· · · · · · · · · · · · · · · · · · ·
0 Powdery Mildew (Micros)	ohaera diffusa)		\$.		
2 Brown Stem Rot (Cephal	osporium gregatum) MC	oderately Resista	nt		
0 Stem Canker (Diaporthe)	phaseolorum vat. caulivora)				

19. DISEASE REACTI	ON: (Enter 0 = Not Tested; 1 = Susceptible; 2 = I	Resistant) (Continued)						
FUNGAL DISEA	SES: (Continued)							
1 Pod and S	tem Blight (Diaporthe phaseolorum var; sojae)							
1 Purple See	Purple Seed Stain (Cercospora kikuchii)							
0 Rhizocton	ia Root Rot (Rhizoctonia solani)							
Phytophth	ora Rot (Phytophthora megasperma var. sojae)	• '						
2 Race 1	0 Race 2 2 Race 3 1	Race 4 0 Race 5	0 Race 6 2 Race 7					
0 Race 8	0 Race 9 Other (Specify)							
VIRAL DISEASE	:S:							
0 Bud Blight	(Tobacco Ringspot Virus)							
	saic (Bean Yellow Mosaic Virus)							
	osaic (Cowpea Chlorotic Virus)							
	(Bean Pod Mottle Virus)							
NEMATODE DIS	e (Soybean Mosaic Virus)							
	yst Nematode (Heterodera glycines)	<u> </u>						
Race 1	1 Race 2 1 Race 3 1	Race 4 1 Other /S	oecify)					
Lance Nem	atode (Hoplolaimus Colombus)							
Southern Root Knot Nematode (Meloidogyne incognita)								
0 Northern R	oot Knot Nematode (Meloidogyne Hapla)							
0 Peanut Roc	t Knot Nematode (Meloidogyne arenaria)	•						
0 Reniform N	lematode (Rotylenchulus reniformis)							
OTHER DI	SEASE NOT ON FORM (Specify):							
		· · · · · · · · · · · · · · · · · · ·						
	ESPONSES: (Enter 0 = Not Tested; 1 = Suscept	ible; 2 = Resistant)						
1 Iron Chloro	sis on Calcareous Soil							
Other (Specify)								
1. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)								
Mexican Bean Beetle (Epilachna varivestis)								
Potato Leaf Hopper (Empoasca fabae)								
Other (Specify)								
2. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.								
CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY					
Plant Shape	S 20 - 91	Seed Coat Luster	S 20-91					
Leaf Shape	A2506	Seed Size	S 20-91					
Leaf Color	\$ 20-91	Seed Shape	S 20-91					
Leaf Size	A2242	Seedling Pigmentation	S 19-90					

FORM LMGS-470-57 (2-82)

C Page 3 of 4 6

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY NO. OF DAYS MATURITY	DAYS		CM PLANT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
	SCORE HEIGHT	CM Width	CM Length	% Protein	% Oil				
Submitted	126	2.4	79	5.9	10.6	39.9	22.2	USDA-A)	TS-PYPO
A2242 Name of Similar Variety	128	2.9	80	6.1	10.3	39.8	21.2	96 MAR 1	9 A10:07

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

- 1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
- 2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
- 3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
- 4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

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U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE	The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.			
EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).			
1. NAME OF APPLICANT(S)	TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME		
Novartis Seeds, Inc.		S23-06		
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (include area code)	6. FAX (include area code)		
P.O. Box 959 Minneapolis, MN 55440	612-593-6501			
8. Does the applicant own all rights to the variety? Mark an "X" in approp	riate block. If no, please explain.	YES NO		
	NO If no, please answer one of the	YES NO		
a. If original rights to variety were owned by individual(s), is (are) the o				
	NO If no, give name of country			
b. If original rights to variety were owned by a company(ies), is(are) the		१५? इ.स. १.५८ - १.५८ - १५ - १५५५ - १५८		
and the state of t	NO If no, give name of country	Section 1		
11. Additional explanation on ownership (if needed, use reverse for extra s	pace):			
AND THE RESERVE OF THE PROPERTY OF THE PROPERT	02 y	· ·		
		· -		
PLEASE NOTE:				
Plant variety protection can be afforded only to owners (not licensees) who meet of	one of the following criteria:			
 If the rights to the variety are owned by the original breeder, that person must which affords similar protection to nationals of the U.S. for the same genus and 	pe a U.S. national, national of a UPOV mends species.	ber country, or national of a country		

- 2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- 3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to compete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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